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<110> Gen Biosciences, Inc.

Grenier, Jennifer
Marshall, David
Prudent, James
Richmond, Craig
Roesch, Eric
Scherrer, Christopher
Sherrill, Christopher
Ptacin, Jerod

<120> Solid Support Assay Systems and Methods Utilizing Non-Natural Bases

<130> PAT015-US5

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 taaaaccca yagtcggcg ctccctgtta gatg 154

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<220>
 <223> synthetic oligonucleotide

<220>
 <221> modified_base
 <222> (1)..(1)
 <223> n represents deoxythymidylate labeled with 6-carboxyfluorescein
 (6-FAM)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, c, g, or t

<400> 121
 nctgatctga cctcagactg ttg 23

<210> 122
 <211> 19
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<400> 122
 gcaaggctct acttcctgc 19

<210> 123
 <211> 20
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<220>
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 <223> n represents deoxythymidylate labeled with 6-carboxyfluorescein
 (6-FAM)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, c, g, or t

<400> 123
 ngactgctgg agagctgagg 20

<210> 124
 <211> 21
 <212> DNA
 <213> Artificial

<220>

<223> synthetic oligonucleotide
 <400> 124
 gtgtcttggc tgctcagtat g 21

<210> 125
 <211> 21
 <212> DNA
 <213> Artificial
 <220>
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<220>
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 <223> n represents deoxythymidylate labeled with 6-carboxyfluorescein
 (6-FAM)

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> n is a, c, g, or t

<400> 125
 nggactgtcc aaagggatct c 21

<210> 126
 <211> 22
 <212> DNA
 <213> Artificial
 <220>
 <223> synthetic oligonucleotide

<400> 126
 caacttcttg gtcattggttg tc 22

<210> 127
 <211> 19
 <212> DNA
 <213> Artificial
 <220>
 <223> synthetic oligonucleotide

<220>
 <221> modified_base
 <222> (1)..(1)
 <223> n represents indodicarbocyanine
 3-l-O-(2-cyanoethyl)-(N,N-diisopropyl)-phosphoramidite (Cy3)

<220>

<221> misc_feature
<222> (1)..(1)
<223> n is a, c, g, or t

<400> 127
nccttctctgc aytccacag

19

<210> 128
<211> 26
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
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<222> (1)..(1)
<223> n represents deoxythymidylate labeled with 6-carboxyfluorescein
(6-FAM)

<220>
<221> misc_feature
<222> (1)..(1)
<223> n is a, c, g, or t

<400> 128
ncagtattat catctcctgg cttagc

26

<210> 129
<211> 20
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (1)..(1)
<223> n represents deoxythymidylate labeled with 6-carboxyfluorescein
(6-FAM)

<220>
<221> misc_feature
<222> (1)..(1)
<223> n is a, c, g, or t

<400> 129
ncacatacac catgtcagcc

20

<210> 130
<211> 17

<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<400> 130
tgagcagtcg gtcagtg

17

<210> 131
<211> 28
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (4)..(4)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (8)..(8)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (8)..(8)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 131
gtgnacangc ngcttcatac aaacccac

28

<210> 132
<211> 28
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>

<221> modified_base
<222> (4)..(4)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (9)..(9)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (9)..(9)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 132
cgantctgnc ngcttcatac aaacccat

28

<210> 133
<211> 28
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (4)..(4)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (8)..(8)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (8)..(8)
<223> n is a, c, g, or t

<220>

<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 133
ctancaancc ncactctcct ctgtagaa

28

<210> 134
<211> 28
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (5)..(5)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (7)..(7)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (7)..(7)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 134
gagancnaag ncactctcct ctgtagag

28

<210> 135
<211> 31
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (5)..(5)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (5)..(5)

<223> n is a, c, g, or t

<220>

<221> modified_base

<222> (9)..(9)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (9)..(9)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (11)..(11)

<223> n represents a n-propylene spacer (c3)

<400> 135

gttcntgang ngaaaatttc ttagtgatcc t

31

<210> 136

<211> 30

<212> DNA

<213> Artificial

<220>

<223> synthetic oligonucleotide

<220>

<221> modified_base

<222> (3)..(3)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (3)..(3)

<223> n is a, c, g, or t

<220>

<221> modified_base

<222> (6)..(6)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (6)..(6)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (11)..(11)

<223> n represents a n-propylene spacer (c3)

<400> 136

gctanctac naaaatttct tagtgatccc

30

<210> 137

<211> 29

<212> DNA

<213> Artificial

<220>

<223> synthetic oligonucleotide

<220>

<221> modified_base

<222> (5)..(5)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (5)..(5)

<223> n is a, c, g, or t

<220>

<221> modified_base

<222> (7)..(7)

<223> n represents iso-guanine

<220>

<221> misc_feature

<222> (7)..(7)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (11)..(11)

<223> n represents a n-propylene spacer (c3)

<400> 137

gttancntcc nagtgtagt tatttggt

29

<210> 138

<211> 28

<212> DNA

<213> Artificial

<220>

<223> synthetic oligonucleotide

<220>

<221> modified_base

<222> (4)..(4)

<223> n represents iso-guanine

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<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (9)..(9)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (9)..(9)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 138
cacnatacng ngtgtagtt atttgggc

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28

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<210> 139
<211> 29
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (2)..(2)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (7)..(7)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (7)..(7)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

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<400> 139
cntaccnatg ntaacaccag taagttgac

29

<210> 140
<211> 29
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (2)..(2)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (6)..(6)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 140
gncganaatc ntaacaccag taagttgag

29

<210> 141
<211> 28
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (2)..(2)
<223> n represents iso-guanine

<220>
<221> misc_feature

<222> (2)..(2)
 <223> n is a, c, g, or t

 <220>
 <221> modified_base
 <222> (7)..(7)
 <223> n represents iso-guanine

 <220>
 <221> misc_feature
 <222> (7)..(7)
 <223> n is a, c, g, or t

 <220>
 <221> misc_feature
 <222> (11)..(11)
 <223> n represents a n-propylene spacer (c3)

 <400> 141
 gncgtanttg nagaataagg agagagca

28

<210> 142
 <211> 27
 <212> DNA
 <213> Artificial

 <220>
 <223> synthetic oligonucleotide

 <220>
 <221> modified_base
 <222> (3)..(3)
 <223> n represents iso-guanine

 <220>
 <221> misc_feature
 <222> (3)..(3)
 <223> n is a, c, g, or t

 <220>
 <221> modified_base
 <222> (7)..(7)
 <223> n represents iso-guanine

 <220>
 <221> misc_feature
 <222> (7)..(7)
 <223> n is a, c, g, or t

 <220>
 <221> misc_feature
 <222> (11)..(11)
 <223> n represents a n-propylene spacer (c3)

 <400> 142
 gtntatnccg ngaataagga gagagcg

27

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<210> 143
<211> 31
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (5)..(5)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (8)..(8)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (8)..(8)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 143
gacnacntc nagaatagtc cttgctatta a

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31

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<210> 144
<211> 31
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (5)..(5)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, c, g, or t

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<220>
<221> modified_base
<222> (9)..(9)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (9)..(9)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 144
ggaanaacng nagaatagtc cttgctatta g

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31

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<210> 145
<211> 26
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

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<220>
<221> modified_base
<222> (4)..(4)
<223> n represents iso-guanine

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<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

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<220>
<221> modified_base
<222> (6)..(6)
<223> n represents iso-guanine

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<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

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<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

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```

<400> 145
gatntncagc nagaatgcac actgca

```

26

<210> 146
<211> 25
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (3)..(3)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (3)..(3)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (6)..(6)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 146
gtnatntgcg ngaatgcaca ctgcg

25

<210> 147
<211> 24
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (4)..(4)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (4)..(4)
<223> n is a, c, g, or t

<220>

<221> modified_base
<222> (8)..(8)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (8)..(9)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (9)..(9)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 147
gatngtcnng ngctagcgga ggcc

24

<210> 148
<211> 24
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (3)..(3)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (3)..(3)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (6)..(6)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (6)..(6)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 148

ggncctnatgg ngctagcgga ggct

24

<210> 149
<211> 61
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<400> 149
cttctcccat tgcccagggc actctcctct gtagartaga ctgatytgtg tggagacatc 60

a 61

<210> 150
<211> 35
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (2)..(2)
<223> n represents iso-cytosine

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (5)..(5)
<223> n represents iso-cytosine

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (8)..(8)
<223> n represents iso-cytosine

<220>
<221> misc_feature
<222> (8)..(8)
<223> n is a, c, g, or t

<220>
<221> modified_base

<222> (12)..(12)
 <223> n represents iso-cytosine

 <220>
 <221> misc_feature
 <222> (12)..(12)
 <223> n is a, c, g, or t

 <400> 150
 cngcnagnga tntgatgtct ccacaaagat cagtc

35

<210> 151
 <211> 28
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<220>
 <221> modified_base
 <222> (4)..(4)
 <223> n represents iso-guanine

<220>
 <221> misc_feature
 <222> (4)..(4)
 <223> n is a, c, g, or t

<220>
 <221> modified_base
 <222> (8)..(8)
 <223> n represents iso-guanine

<220>
 <221> misc_feature
 <222> (8)..(8)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (11)..(11)
 <223> n represents a n-propylene spacer (c3)

<400> 151
 ctancaancc ncactctcct ctgtagaa

28

<210> 152
 <211> 28
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<220>
<221> modified_base
<222> (5)..(5)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (5)..(5)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (7)..(7)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (7)..(7)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (11)..(11)
<223> n represents a n-propylene spacer (c3)

<400> 152
gagancnaag ncactctcct ctgtagag

28

<210> 153
<211> 13
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<220>
<221> misc_feature
<222> (1)..(1)
<223> n represents a 5'-phosphate

<220>
<221> modified_base
<222> (2)..(2)
<223> n represents iso-guanine

<220>
<221> misc_feature
<222> (2)..(2)
<223> n is a, c, g, or t

<220>
<221> modified_base
<222> (6)..(6)
<223> n represents iso-guanine

<220>
 <221> misc_feature
 <222> (6)..(6)
 <223> n is a, c, g, or t

<220>
 <221> modified_base
 <222> (9)..(9)
 <223> n represents iso-guanine

<220>
 <221> misc_feature
 <222> (9)..(9)
 <223> n is a, c, g, or t

<220>
 <221> modified_base
 <222> (12)..(12)
 <223> n represents iso-guanine

<220>
 <221> misc_feature
 <222> (12)..(12)
 <223> n is a, c, g, or t

<400> 153
 nnatcnctng cng

13

<210> 154
 <211> 18
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<400> 154
 agaacccttt cctcttcc

18

<210> 155
 <211> 47
 <212> DNA
 <213> Artificial

<220>
 <223> synthetic oligonucleotide

<400> 155
 aagaaccctt tcctcttccg atgcaggata cttacaata aatattt

47

<210> 156
 <211> 39
 <212> DNA
 <213> Artificial

<220>

<223> synthetic oligonucleotide

<400> 156

gcagacagga yaaatattta ttgttaagta tcctgcac

39